5. Industrial Sector

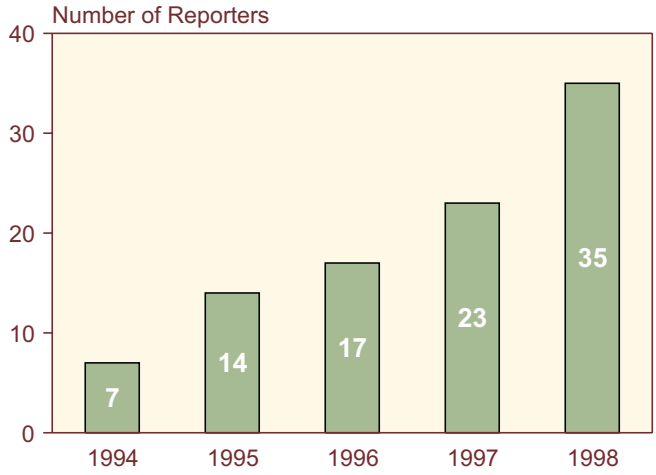
Who Reported?

Thirty-five companies in the industrial sector submitted reports for 1998 to the Voluntary Reporting Program, a 52-percent increase over the number of entities reporting in the previous reporting cycle (Figure 10). Twelve new reporters submitted reports for 1998, including several cement companies, a group of five Climate Wise participants from the Miami–Dade County region, and familiar consumer product manufacturers such as The Gillette Company and the Estee Lauder Companies. Submitting reports again were other well-known companies, such as General Motors Corporation, IBM, Johnson & Johnson, Lucent Technologies, Motorola–Austin, The Dow Chemical Company, Volvo Cars of North America, and the recently merged BP Amoco.

What Was Reported?

Fifteen industrial entities reported at the project level, 13 reported at both the project and entity levels, and 7 reported on entity-wide emissions and/or reductions only. Emission reductions reported at the entity level totaled 20.6 million metric tons carbon dioxide equivalent. Most of the reported savings, about 12.7 million tons carbon dioxide equivalent, came from CONSOL Coal Group's reduction of coalbed methane emissions through internal use and joint partnership gas sales.

Figure 10. Number of Industrial Sector Entities Submitting Reports, 1994-1998



Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

Reported project-level emission reductions totaled 9.9 million metric tons carbon dioxide equivalent (Table 12). Seventy percent (79) of the emission reduction projects reported involved energy end use. The 3 million metric tons in end-use reductions, however, represented less than one-third of the total reported industrial-sector savings. Some of the largest reductions, totaling nearly 4 million metric tons carbon dioxide equivalent, came

Table 12. Number of Projects and Emission Reductions Reported by Industrial Sector Reporters by Project Type, Data Year 1998
(Metric Tons Carbon Dioxide Equivalent)

Project Type	Number of Projects Reported	Emission Reductions Reported			
		Carbon Dioxide	Methane	Halogenated Substances	Total
Cogeneration and Waste Heat Recovery	1	263,135	—	—	**263,135**
Energy End Use	79	3,066,968	—	—	**3,066,968**
Transportation	6	13,532	—	—	**13,532**
Oil and Natural Gas Systems and Coal Mining: Methane[a]	4	-12,428	1,427,135	—	**1,414,708**
Carbon Sequestration	1	102,980	—	—	**102,980**
Halogenated Substances[b]	11	*	—	3,770,560	**3,770,560**
Other Emission Reduction Projects	10	1,224,366	147	—	**1,224,513**
Total	**113**	**4,658,554**	**1,427,282**	**3,770,560**	**9,856,397**

*Less than 0.5 metric tons.
[a]Negative emission reduction reflects increased carbon dioxide emissions from methane flaring.
[b]Halogenated gases include perfluorocarbons and hydrofluorocarbons only. Chlorofluorocarbons and hydrochlorofluorocarbons are not included in the totals because of the uncertainty associated with estimates of their net global warming potential.
Note: Excludes confidential data.
Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

from the 11 projects that reduced emissions of halogenated substances. Also reported were a variety of emission reduction actions at BP Amoco's petroleum refineries and Separation Technologies' use of fly ash as a substitute for cement in concrete production, with emission reductions totaling more than 1.2 million metric tons. Two coal mine methane recovery projects undertaken by U.S. Steel Mining Company and one by Peabody Holding Company avoided a reported 1.4 million metric tons in carbon dioxide equivalent emissions combined. A carbon sequestration project by BP Amoco reported sequestering over 100,000 metric tons of carbon dioxide.

Industrial Sector Highlights

Non-CO_2 Emission Reductions Among the Highest in the Industrial Sector

Noranda Aluminum, Inc., recorded the industrial sector's largest single emission reduction, avoiding emissions of 495 metric tons of perfluoromethane and 49 metric tons of perfluoroethane in an anode effect reduction project. With global warming potentials (GWPs) of 6,500 and 9,200 for perfluoromethane and perfluoroethane, respectively, the reductions are equivalent to about 3.7 million metric tons of carbon dioxide and represent more than one-third of all industrial-sector reductions. VANALCO, Inc., and Alcan Ingot (Sebree Aluminum Plant) also reported large perfluorocarbon reductions with similar projects that minimize the perfluorocarbon-producing anode effect caused by low levels of alumina in electrolyte baths during the aluminum smelting process.

Two coal mining companies reported large coalbed methane reductions through gas recovery, use, and sale. In two projects, the U.S. Steel Mining Company avoided over 1.3 million metric tons in carbon dioxide equivalent emissions. Peabody Holding Company, Inc., reported 86,700 metric tons of carbon dioxide equivalent savings by delivering gob well methane gas to a natural gas pipeline.

More Reports from Climate Wise Partners

The Voluntary Reporting Program received reports for 1998 from 10 new reporters in the industrial sector that are participants in the Climate Wise program. Almost half of all the industrial sector reporters (17 of 35) are Climate Wise participants. The following new Climate Wise reporters submitted information on a range of energy end-use and transportation activities: Dade Behring, Inc.—a clinical laboratory services company; Engelhard—a specialty chemical company; Imperial Plating—an electroplating, anodizing, and supply company; Industrial Equipment and Supplies—an industrial equipment manufacturer; Pintexs—a paint and coating manufacturer; Allergan, Inc.—a global pharmaceutical and eye care company; Essential Foods, Inc.—a food manufacturer and distributor; and California Portland Cement Company—a cement manufacturer, which submitted separate reports for its Colton and Mojave plants in California and its subsidiary in Arizona, the Arizona Portland Cement Company.

Growing Participation by the Cement Industry

In addition to the three reports received from California Portland Cement Company affiliates, cement industry reports for 1998 included one from another Climate Wise participant, the Dragon Products Company. Cement manufacturing is an energy-intensive undertaking because it includes the calcination of limestone to lime, one of the principal ingredients of cement. All but one of the projects reported by cement industry reporters for 1998 involved process improvements that reduced energy consumption. In the remaining project, larger, more efficient trucks for hauling limestone were introduced at the quarry. Together, the projects reduced carbon dioxide emissions by a reported 427,857 metric tons in 1998.

U.S. Industry Focus on Energy End Use Activities

Most of the projects reported for 1998 by industrial sector participants focused on energy end use activities. Sixty-eight of the 84 end-use projects involved one or more of the following four project types:[a]

- Equipment and appliances improvement or replacement (37 projects, 2.5 million metric tons carbon dioxide equivalent)
- Lighting and lighting control (17 projects, 1.6 million metric tons carbon dioxide equivalent)
- Heating, ventilation, and air conditioning (15 projects, 1.5 million metric tons carbon dioxide equivalent)
- Motor and motor drive (8 projects, 1.5 million metric tons carbon dioxide equivalent)

Reductions from U.S. Operations Reported by BP Amoco

BP Amoco's projects, most of which incorporated multiple initiatives at its U.S. crude oil production, chemical manufacturing, and refining installations, produced some of the industrial sector's largest reported reductions in 1998, including the following:

- Thermal process efficiency improvements, 236,000 metric tons carbon dioxide
- Petroleum refining modifications, 565,000 metric tons carbon dioxide
- Petroleum refining emission control project, 543,000 metric tons carbon dioxide
- Crude oil production emission reduction, 448,045 metric tons carbon dioxide.

[a]Because more than one project type may be assigned to a single project, the sum of the number of projects and the sum of reported emission reductions may exceed the totals for energy end use projects.